

ABSTRACT OF THE DISCLOSURE

A shut-down circuit configured for use with an electronic ballast coupled to a lamp in a control path includes a device for sensing the electrical energy associated with the control path, and a sensing circuit for shutting down the ballast in the event that the energy does not conform to a predetermined condition. The sensed energy may be current indicative of lamp installation or removal, or voltage indicative of arcing. The device for sensing the electrical energy associated with the control path may be an isolation transformer or alternative devices such as optical isolators may be employed. The circuitry may further include electronic componentry to disable the sensing circuit during initial energization of the lamp. In one disclosed example, the sensing circuit includes a node that should be at or near a predetermined electrical potential when the lamp is operating properly, and a switch such as a Schmitt trigger coupled to the node that turns on or off to shut down the ballast if the node is not at or near the predetermined electrical potential. In an implementation used to detect voltage fluctuations indicative of arcing, the circuitry may include a high-pass filter or differentiator and detector to detect high-frequency noise. Alternatively, a phase-locked loop may be coupled to a low-pass filter to detect high-frequency noise indicative of arcing.